If you are using a printed copy of this procedure, and not the on-screen version, then you <u>MUST</u> make sure the dates at the bottom of the printed copy and the on-screen version match.

The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.

Hard copies of all signed, official, C-A Operating Procedures are kept on file in the C-A ESHQ

Training Office, Bldg. 911A.

C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.14.h Compressor Building 1005H (PEER 19) ODH Tests

C-A-OPM	Procedures in w	hich this Attachmen	t is used.
4.120.14			
	Hand Proce	ssed Changes	
HPC No.	<u>Date</u>	Page Nos.	<u>Initials</u>
A	pproved:	Signature on Factor Accelerator Department	<u>ile</u>

V. Castillo

4.120.14.h Compressor Building 1005H (PEER 19) ODH Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:	Checksum:
Division B Software Filename and Checksum: Title:	Checksum:
Initial testing complete:	
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date://
Acceptance test procedure complete (following repairs and retesti	ing if required):
Test Team Leader's Name (Print):	Life Number:
Test Team Leader's Name (Sign):	Date://
<u>Test results reviewed by</u> :	
Safety Section Head's Name (Print):	Life Number:
Safety Section Head's Name (Sign):	Date://
Test results accepted by Radiation Safety Committee:	
RSC Member's Name (Print):	Life Number:
RSC Member's Name (Sign):	Date://

1.1 Conduct a visual check on Peer 19 ODH boxes following Table 1 below $\sqrt{\ = \ ok}$, x = problem

	Vonifr	Verify		Crash/ODH	I boxes only		Vorify all
ODH BOXES	Verify elec.		Divis	ion A	Divis	ion B	Verify all X's
ODII BOAES	condn. ok	condn. ok	Lcd Rdg	Tp2 – Tp4 Vltg	Lcd Rdg	Tp2 – Tp4 Vltg	corrected
5H-ODB4			%	V	%	V	
5H-ODB5 Sampling System			%	V	%	V	

Table 1 – Summary of visual check on ODH boxes in the Compressor Building

☐ Check for Test Acceptance of visual check on Peer 19 ODH boxes

1.2 Verification of valid calibration of ODH sensors in Peer 19, following Table 2 below $\sqrt{=}$ ok, x =problem

ODH sensor	Verify valid calibration	Record calibration date	Verify all x's corrected	Record new calibration date
AS5H-4A				
AS5H-4B				
AS5H-5 Sampling Sensor		/		

Table 2 – Verification of valid calibration of ODH sensors in Compressor Building

☐ Check for Test Acceptance of verification of valid calibration of ODH sensors in Peer 19

1.3 Test of Div A ODH sensor AS5H-4 in 5H-ODB4

	JUMPER	Tp2 and Tp4 on the Div A pcb in 5H-ODB4	
	VERIFY	MCR sees AS5H-3 Div A	TRIPPED
	VERIFY	MCR sees Compressor ODH alarm is	ON
	VERIFY	MCR Compressor ODH alarm is	SOUNDING
	VERIFY	Div A blue strobes on: 5H-ODB1 \square , 5H-ODB2 \square , 5H-ODB3 \square ,	
		5H-ODB4 □ and 5H-ODB5 □ are	FLASHING
	VERIFY	All red Strobes are	FLASHING
	VERIFY	All rotating red Beacons are	ON
	VERIFY	Fan CSF4 is	ON
	VERIFY	Fan CSF5 is	ON
	VERIFY	Fan CEF3 is	ON
	VERIFY	Fan CEF4 is	ON
	VERIFY	Attempt to turn fans off at Stations: 5H-FanB1 □, 5H-FanB2 □,	FAIL
		CVS-1 \square , CVS-2 \square , CVS-3 \square , and CVS-4 \square	
	TURN	Bypass Switch to Bypass	
	VERIFY	All Strobes and Beacons	STOP
_	TURN	Bypass Switch from Bypass	
	VERIFY	All Strobes and Beacons	CONTINUE
	REMOVE	Jumper between Tp2 and Tp4	
П		Jumper between Tp2 and Tp4 MCR sees AS5H-4 Div A	NOT Tripped
	REMOVE VERIFY VERIFY	MCR sees AS5H-4 Div A	NOT Tripped
_	VERIFY	•	NOT Tripped
_	VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □,	
	VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are	OFF
	VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are	OFF OFF
	VERIFY VERIFY VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen	OFF OFF
	VERIFY VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are	OFF OFF OFF
	VERIFY VERIFY VERIFY ACK VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen MCR sees Compressor ODH alarm is Compressor ODH alarm is	OFF OFF OFF
	VERIFY VERIFY VERIFY ACK VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen MCR sees Compressor ODH alarm is	OFF OFF OFF
	VERIFY VERIFY VERIFY ACK VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen MCR sees Compressor ODH alarm is Compressor ODH alarm is	OFF OFF OFF Not Sounding
	VERIFY VERIFY VERIFY ACK VERIFY VERIFY AFTER	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen MCR sees Compressor ODH alarm is Compressor ODH alarm is > 90 Secs	OFF OFF OFF
	VERIFY VERIFY VERIFY ACK VERIFY VERIFY AFTER VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen MCR sees Compressor ODH alarm is Compressor ODH alarm is > 90 Secs Fan CSF4 is	OFF OFF OFF OFF OFF
	VERIFY VERIFY VERIFY ACK VERIFY VERIFY AFTER VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen MCR sees Compressor ODH alarm is Compressor ODH alarm is > 90 Secs Fan CSF4 is Fan CSF5 is	OFF OFF OFF OFF
	VERIFY VERIFY VERIFY ACK VERIFY VERIFY AFTER VERIFY VERIFY VERIFY	MCR sees AS5H-4 Div A Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are All red Strobes are All rotating red Beacons are ODH in MCR Acknowledge Screen MCR sees Compressor ODH alarm is Compressor ODH alarm is > 90 Secs Fan CSF4 is Fan CSF5 is Fan CEF3 is	OFF OFF OFF OFF OFF

[☐] Check for Div A Test Acceptance of sensor AS5H-4

1.4 Test of Div B ODH sensor AS5H-4 in 5H-ODB4

JUMPER	Tp2 and Tp4 on the Div B pcb in 5H-ODB4	
VERIFY	MCR sees AS5H-4 Div B	TRIPPED
VERIFY	MCR sees Compressor ODH alarm is	ON
VERIFY	MCR Compressor ODH alarm is	SOUNDING
VERIFY	Div A blue strobes on: 5H-ODB1 \square , 5H-ODB2 \square , 5H-ODB3 \square ,	
	5H-ODB4 □ and 5H-ODB5 □ are	FLASHING
VERIFY	All red Strobes are	FLASHING
VERIFY	All rotating red Beacons are	ON
VERIFY	Fan CSF4 is	ON
VERIFY	Fan CSF5 is	ON
VERIFY	Fan CEF3 is	ON
VERIFY	Fan CEF4 is	ON
VERIFY	Attempt to turn fans off at Stations: 5H-FanB1 \square , 5H-FanB2 \square , CVS-1 \square , CVS-2 \square , and CVS-4 \square	FAIL
TURN	Bypass Switch to Bypass	
VERIFY	All Strobes and Beacons	STOP
TURN	Bypass Switch from Bypass	
VERIFY	All Strobes and Beacons	CONTINUE
REMOVE	Jumper between Tp2 and Tp4	
VERIFY	MCR sees AS5H-4 Div B	NOT Tripped
VERIFY	Div A blue strobes on: 5H-ODB1 \square , 5H-ODB2 \square , 5H-ODB3 \square ,	• •
	5H-ODB4 □ and 5H-ODB5 are	OFF
VERIFY	All red Strobes are	OFF
VERIFY	All rotating red Beacons are	OFF
ACK	ODH in MCR Acknowledge Screen	
VERIFY	MCR sees Compressor ODH alarm is	OFF
VERIFY	Compressor ODH alarm is	Not Sounding
AFTER	> 90 Secs of jumper removal	
VERIFY	Fan CSF4 is	OFF
VERIFY	Fan CSF5 is	OFF
VERIFY	Fan CEF3 is	OFF
VERIFY	Fan CEF4 is	OFF

1.5 Test of Div A ODH sensor AS5H-4 in 5H-ODB4 for > 10 minutes trip

	JUMPER	Tp2 and Tp4 on the Div A pcb in 5H-ODB4	
	VERIFY	MCR sees AS5H-4 Div A	TRIPPED
	VERIFY	MCR sees Compressor ODH alarm is	ON
	VERIFY	MCR Compressor ODH alarm is	SOUNDING
	VERIFY	Div A blue strobes on: 5H-ODB1 \square , 5H-ODB2 \square , 5H-ODB3 \square ,	
_		5H-ODB4 □ and 5H-ODB5 □ are	FLASHING
	VERIFY	All red Strobes are	FLASHING
	VERIFY	All rotating red Beacons are	ON
	VERIFY	Fan CSF4 is	ON
	VERIFY	Fan CSF5 is	ON
	VERIFY	Fan CEF3 is	ON
	VERIFY	Fan CEF4 is	ON
	AFTER	> 10 minutes of jumper insertion	
	111 1111	- 10 111111100 01 Jumpot 111011	
	VERIFY	Fan CSF1 is	ON
	VERIFY	Fan CSF2 is	ON
	VERIFY	Fan CSF3 is	ON
	VERIFY	Fan CSF4 is	ON
	VERIFY	Fan CSF5 is	ON
	VERIFY	Fan CEF1 is	ON
	VERIFY	Fan CEF2 is	ON
	VERIFY	Fan CEF3 is	ON
	VERIFY	Fan CEF4 is	ON
	(DELIDA)		
	TURN	Bypass Switch to Bypass	CTIOD
	VERIFY	All Strobes and Beacons	STOP
	AFTER VERIFY	> 90 Secs All Fans	OFF
	TURN	Bypass Switch from Bypass	Off
	VERIFY	All Strobes and Beacons	CONTINUE
Ц	AFTER	> 30 Secs	CONTINUE
	VERIFY	Fans: CSF4 □, CSF5 □, CEF3 □ and CEF4 □ are	ON
	,	Tans. Col. 1, Col. 2, Col. 3 and Col. 4 and	011
	REMOVE	Jumper between Tp2 and Tp4	
	VERIFY	MCR sees AS5H-4 Div A	NOT Tripped
	VERIFY	MCR sees Compressor ODH alarm is	ON
	VERIFY	MCR Compressor ODH alarm is	SOUNDING
	VERIFY	Div A blue strobes on: 5H-ODB1 □, 5H-ODB2 □, 5H-ODB3 □,	
_		5H-ODB4 □ and 5H-ODB5 are	FLASHING
	VERIFY	All red Strobes are	FLASHING
	VERIFY	All rotating red Beacons are	ON
	ACK	ODH in MCR Acknowledge Screen	
_	VEDIEV	MCD cook Compression ODII closes in	OFF
	VERIFY	MCR sees Compressor ODH alarm is	OFF
	VERIFY	Compressor ODH alarm is	Not Sounding
	AFTER	> 90 Secs from jumper removal	

VERIFY	Fan CSF4 is	OFF
VERIFY	Fan CSF5 is	OFF
VERIFY	Fan CEF3 is	OFF
VERIFY	Fan CEF4 is	OFF

☐ Check for Test Acceptance of Div A ODH sensor AS5H-4 in 5H-ODB4 for > 10 minutes trip

1.6 Test of Div B ODH sensor AS5H-4 in 5H-ODB4 for > 10 minutes trip

	JUMPER	Tp2 and Tp4 on the Div B pcb in 5H-ODB4	
	VERIFY	MCR sees AS5H-4 Div B	TRIPPED
	VERIFY	MCR sees Compressor ODH alarm is	ON
	VERIFY	MCR Compressor ODH alarm is	SOUNDING
	VERIFY	Div B blue strobes on: 5H-ODB1 \square , 5H-ODB2 \square , 5H-ODB3 \square ,	
		5H-ODB4 □ and 5H-ODB5 □ are	FLASHING
	VERIFY	All red Strobes are	FLASHING
	VERIFY	All rotating red Beacons are	ON
	VERIFY	Fan CSF4 is	ON
	VERIFY	Fan CSF5 is	ON
	VERIFY	Fan CEF3 is	ON
	VERIFY	Fan CEF4 is	ON
	AFTER	> 10 minutes of jumper insertion	
	VERIFY	Fan CSF1 is	ON
	VERIFY	Fan CSF2 is	ON
	VERIFY	Fan CSF3 is	ON
	VERIFY	Fan CSF4 is	ON
	VERIFY	Fan CSF5 is	ON
	VERIFY	Fan CEF1 is	ON
	VERIFY	Fan CEF2 is	ON
	VERIFY	Fan CEF3 is	ON
	VERIFY	Fan CEF4 is	ON
	TURN	Bypass Switch to Bypass	
	VERIFY	All Strobes and Beacons	STOP
	AFTER	> 90 Secs	
	VERIFY	All Fans	OFF
_	TURN	Bypass Switch from Bypass	
	VERIFY	All Strobes and Beacons	CONTINUE
	AFTER	> 30 Secs	ON
	VERIFY	Fans: CSF4 \square , CSF5 \square , CEF3 \square and CEF4 \square are	ON
	REMOVE	Jumper between Tp2 and Tp4	
	VERIFY	MCR sees AS5H-4 Div B	NOT Tripped
	VERIFY	MCR sees Compressor ODH alarm is	ON
	VERIFY	MCR Compressor ODH alarm is	SOUNDING
	VERIFY	Div B blue strobes on: $5H-ODB1 \square$, $5H-ODB2 \square$, $5H-ODB3 \square$,	
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		VERIFY VERIFY	5H-ODB4 □ and 5H-ODB5 are All red Strobes are All rotating red Beacons are	FLASHING FLASHING ON
		ACK	ODH in MCR on Acknowledge Screen	
		VERIFY VERIFY	MCR sees Compressor ODH alarm is Compressor ODH alarm is	OFF Not Sounding
		AFTER	> 90 Secs from jumper removal	
		VERIFY	Fan CSF4 is	OFF
		VERIFY	Fan CSF5 is	OFF
		VERIFY	Fan CEF3 is	OFF
		VERIFY	Fan CEF4 is	OFF
		Check for	Test Acceptance of Div B ODH sensor AS5H-4 in 5H-ODB4 for > 10	minutes trip
1.7	Tes	t of Manual (ON/OFF Switch at Station CVS-3	
		PRESS	Fan ON button at Station CVS-3	
		START	90 Sec counter	
		VERIFY	Fan CSF1 is	ON
		VERIFY	Fan CSF2 is	ON
		VERIFY	Fan CSF3 is	ON
		VERIFY	Fan CSF4 is	ON
		VERIFY	Fan CSF5 is	ON
		VERIFY	Fan CEF1 is	ON
		VERIFY	Fan CEF2 is	ON
		VERIFY	Fan CEF3 is	ON
		VERIFY	Fan CEF4 is	ON
		PRESS	Fan OFF button at Station CVS-3	
		AFTER	> 90 Secs from ON command	
		VERIFY	Fan CSF1 is	OFF
		VERIFY	Fan CSF2 is	OFF
		VERIFY	Fan CSF3 is	OFF
		VERIFY	Fan CSF4 is	OFF
		VERIFY	Fan CSF5 is	OFF
		VERIFY	Fan CEF1 is	OFF
		VERIFY	Fan CEF2 is	OFF
		VERIFY	Fan CEF3 is	OFF
		VERIFY	Fan CEF4 is	OFF
		Check for	Test Acceptance of Manual ON/OFF Switch at Station CVS-3	

1.8	rest of Manual C	ON/OFF Switch at Station CVS-4	
	PRESS	Fan ON button at Station CVS-4	
	START	90 Sec counter	
	□ VERIFY	Fan CSF1 is	ON
	□ VERIFY	Fan CSF2 is	ON
	□ VERIFY	Fan CSF3 is	ON
	□ VERIFY	Fan CSF4 is	ON
	□ VERIFY	Fan CSF5 is	ON
	□ VERIFY	Fan CEF1 is	ON
	\Box VERIFY	Fan CEF2 is	ON
	\Box VERIFY	Fan CEF3 is	ON
	□ VERIFY	Fan CEF4 is	ON
	PRESS	Fan OFF button at Station CVS-4	
	AFTER	> 90 Secs from ON command	
	□ VERIFY	Fan CSF1 is	OFF
	□ VERIFY	Fan CSF2 is	OFF
	□ VERIFY	Fan CSF3 is	OFF
	VERIFY	Fan CSF4 is	OFF
	VERIFY	Fan CSF5 is	OFF
	□ VERIFY	Fan CEF1 is	OFF
	□ VERIFY	Fan CEF2 is	OFF
	□ VERIFY	Fan CEF3 is	OFF
	□ VERIFY	Fan CEF4 is	OFF
	□ Check for	Test Acceptance of Manual ON/OFF Switch at Station CVS-4	
1.9	Test of ODH	sensor AS5H-4A in 5H-ODB4 with gas	
	FLOW	Helium or Nitrogen across sensor AS5H-4A	
	□ VERIFY	MCR sees AS5H-4 Div A	TRIPPED
	RECORD	Oxygen trip level for Div A	%
	□ VERIFY	MCR sees Compressor ODH alarm is	ON
	□ VERIFY	Compressor ODH alarm is	SOUNDING
		Compressor ODII atariii 18	SOUNDING
	□ VERIFY	Fan CSF4 is	ON
	\Box VERIFY	Fan CSF5 is	ON
	\Box VERIFY	Fan CEF3 is	ON
	□ VERIFY	Fan CEF4 is	ON
	HALT	Flow of gas on AS5H-4A	
	WAIT	For AS5H-4A to clear (level ~ trip-level above)	
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1.8

Test of Manual ON/OFF Switch at Station CVS-4

		ACK	ODH in MCR Acknowledge Screen	
		VERIFY	MCR sees Compressor ODH alarm is	OFF
		VERIFY	Compressor ODH alarm is	Not Sounding
			F 0074	
		VERIFY	Fan CSF4 is	OFF
		VERIFY	Fan CSF5 is	OFF
		VERIFY	Fan CEF3 is	OFF
		VERIFY	Fan CEF4 is	OFF
		Check for	Acceptance of Test of ODH sensor AS5H-4A in 5H-ODB4 with gas	
1.10		Test of ODH	I sensor AS5H-4B in 5H-ODB4 with gas	
		FLOW	Helium or Nitrogen across sensor AS5H-4B	
		VERIFY	MCR sees AS5H-4 Div B	TRIPPED
		RECORD	Oxygen trip level for Div B	%
		VERIFY	MCR sees Compressor ODH alarm is	ON
		VERIFY	MCR Compressor ODH alarm is	SOUNDING
		V EXXII	Next compressor of a dam is	BOCKDING
		VERIFY	Fan CSF4 is	ON
		VERIFY	Fan CSF5 is	ON
		VERIFY	Fan CEF3 is	ON
		VERIFY	Fan CEF4 is	ON
		HALT	Flow of gas on AS5H-4B	
		WAIT	For AS5H-4B to clear (level ~ trip-level above)	
		ACK	ODH in MCR Acknowledge Screen	
		VERIFY	MCR sees Compressor ODH alarm is	OFF
		VERIFY	Compressor ODH alarm is	Not Sounding
	_		•	o .
		VERIFY	Fan CSF4 is	OFF
		VERIFY	Fan CSF5 is	OFF
		VERIFY	Fan CEF3 is	OFF
		VERIFY	Fan CEF4 is	OFF
		Check for	Acceptance of Test of ODH sensor AS5H-4B in 5H-ODB4 with gas	

1.11		Test of ODH Sampling System sensor AS5H-5 in 5H-ODB5 with gas			
		FLOW	Helium or Nitrogen ~ 1" from far input port of Sampling System		
		VERIFY	MCR sees AS5H-1 \square , -2 \square , -3 \square , -4 \square Div A and B	ODH	
		RECORD	Time for Trip	secs	
		RECORD	Oxygen trip level for Div A		
		RECORD	Oxygen trip level for Div B	%	
		VERIFY	MCR sees Compressor ODH alarm on Cryo page is	ON	
		VERIFY	Div A & B Blue strobes & Alarms on: 5H-ODB1 □, 5H-ODB2 □,		
			5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are	ON	
		VERIFY	All red Strobes are	FLASHING	
		VERIFY	All rotating red Beacons are	ON	
		VERIFY	MCR sees Compressor Fans are	ON	
		VERIFY	Fan CSF1 is	ON	
		VERIFY	Fan CSF2 is	ON	
		VERIFY	Fan CSF3 is	ON	
		VERIFY	Fan CSF4 is	ON	
		VERIFY	Fan CSF5 is	ON	
		VERIFY	Fan CEF1 is	ON	
		VERIFY	Fan CEF2 is	ON	
		VERIFY	Fan CEF3 is	ON	
		VERIFY	Fan CEF4 is	ON	
	Ы	HALT	Flow of gas on AS5H-5	ON	
		WAIT	For AS5H-5 to clear (level ~ trip-level above)		
		VERIFY	MCR sees AS5H-1 \square , -2 \square , -3 \square , -4 \square , - 5 \square Div A and B	OK	
		VERIFY	Div A & B Blue strobes & Alarms on: 5H-ODB1 \square , 5H-ODB2 \square ,	011	
		, Elli I	5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are	OFF	
		VERIFY	All red Strobes are	OFF	
		VERIFY	All rotating red Beacons are	OFF	
	Ц			OII	
		AFTER	> 90 Secs		
		VERIFY	MCR sees Compressor Fans are	OFF	
		VERIFY	Fan CSF1 is	OFF	
		VERIFY	Fan CSF2 is	OFF	
		VERIFY	Fan CSF3 is	OFF	
		VERIFY	Fan CSF4 is	OFF	
		VERIFY	Fan CSF5 is	OFF	
		VERIFY	Fan CEF1 is	OFF	
		VERIFY	Fan CEF2 is	OFF	
		VERIFY	Fan CEF3 is	OFF	
		VERIFY	Fan CEF4 is	OFF	
]	ACK	Compressor ODH on MCR Acknowledge Screen	-	
		VERIFY	MCR sees Compressor ODH alarm on Cryo page is	OK	

Check for Acceptance of Test of ODH sensor AS5H-5 in 5H-ODB5 with gas

1.12 Test of Sampling System Pump

	SELECT	Airflow from the Sampling System Panel View (SSPV) menu	
	RECORD RECORD RECORD	Airflow value from SSPV HiThresh value from SSPV LoThresh value from SSPV Offset value from SSPV	
	SELECT	Exit from SSPV menu to get Operation	STATUS
	VERIFY	Operation Status is	NORMAL
	CLOSE	Flow valve to Sensor	
	VERIFY	After ~ Secs (~ 15 secs acceptable) SSPV shows	TROUBLE
	VERIFY VERIFY VERIFY	MCR sees AS5H-1 □, -2 □, -3 □, -4 □, - 5 □ Div A and B MCR sees Compressor ODH alarm on Cryo page is Div A & B Blue strobes & Alarms on: 5H-ODB1 □, 5H-ODB2 □,	ODH ON
		5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are	ON
	VERIFY	All red Strobes are	FLASHING
	VERIFY VERIFY	All rotating red Beacons are MCR sees Compressor Fans are	ON ON
	VERIFY	Fan CSF1 is	ON ON
	VERIFY	Fan CSF2 is	ON
	VERIFY	Fan CSF3 is	ON
	VERIFY	Fan CSF4 is	ON
	VERIFY	Fan CSF5 is	ON
	VERIFY	Fan CEF1 is	ON
	VERIFY	Fan CEF2 is	ON
	VERIFY	Fan CEF3 is	ON
	VERIFY	Fan CEF4 is	ON
	OPEN	Flow valve to Sensor	
	VERIFY	MCR sees AS5H-1 \square , -2 \square , -3 \square , -4 \square , -5 \square Div A and B still	ODH
	VERIFY	MCR sees Compressor ODH alarm on Cryo page is still	ON
	VERIFY	Div A & B Blue strobes & Alarms on: $5H-ODB1 \square$, $5H-ODB2 \square$,	
		5H-ODB3 \square , 5H-ODB4 \square and 5H-ODB5 \square are still	ON
	VERIFY	All red Strobes are still	FLASHING
	VERIFY	All rotating red Beacons are still	ON
	VERIFY	MCR sees Compressor Fans are still	ON
	VERIFY	Fan CSF1 is	ON
	VERIFY	Fan CSF2 is	ON
	VERIFY	Fan CSF3 is Fan CSF4 is	ON ON
	VERIFY VERIFY	Fan CSF4 is Fan CSF5 is	ON ON
	VERIFY VERIFY	Fan CEF1 is	ON ON
	VERIFY	Fan CEF2 is	ON ON
	VERIFY	Fan CEF3 is	ON
	VERIFY	Fan CEF4 is	ON
_	·		

	SELECT ENTER SELECT	Silence option Password Reset and Hit Enter				
	VERIFY	After secs (~ 15 secs acceptable) SSPV Alarm is	OFF			
	VERIFY VERIFY	MCR sees AS5H-1 □, -2 □, -3 □, -4 □ Div A and B Div A & B Blue strobes & Alarms on: 5H-ODB1 □, 5H-ODB2 □,	OK			
		5H-ODB3 □, 5H-ODB4 □ and 5H-ODB5 □ are	OFF			
	VERIFY	All red Strobes are	OFF			
	VERIFY	All rotating red Beacons are	OFF			
	AFTER	> 90 Secs				
	VERIFY	MCR sees Compressor Fans are	OFF			
	VERIFY	Fan CSF1 is	OFF			
	VERIFY	Fan CSF2 is	OFF			
	VERIFY	Fan CSF3 is	OFF			
	VERIFY	Fan CSF4 is	OFF			
	VERIFY	Fan CSF5 is	OFF			
	VERIFY	Fan CEF1 is	OFF			
	VERIFY	Fan CEF2 is	OFF			
	VERIFY	Fan CEF3 is	OFF			
	VERIFY	Fan CEF4 is	OFF			
	SELECT	Exit from SSPV menu to get Operation	STATUS			
	VERIFY	Operation Status is	NORMAL			
	SELECT	Airflow from the Sampling System Panel View (SSPV) menu				
	RECORD	Airflow value from SSPV				
	RECORD	HiThresh value from SSPV				
	RECORD	LoThresh value from SSPV				
	RECORD	Offset value from SSPV				
	RESET	Compressor ODH in MCR				
	LEAVE	SSPV in menu with Operation Status	NORMAL			
	VERIFY	MCR sees Compressor ODH alarm on Cryo page is	OK			
Check for acceptance of Test of Sampling System Pump						

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing:		_
	Date://	
TTL: Sign for completion of final testing:		
	Date: / /	